How to design a digital individual learning RCT-study in the context of the Swedish preschool: experiences from a pilot-study

# Details

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## Sample

17 preschool children in one unit in one preschool in Sweden, aged 3–6.

## Implications For Educators About

## Implications For Policy Makers About

Other

## Other PolicyMaker Implication

Digital tools in pre-school education

## Implications For Stakeholders About

Researchers

# Abstract

This article takes its point of departure in the research methodology of a comprehensive and multi-disciplinary innovative intervention study in Swedish preschools with preschoolers aged 3–5, involving two digital learning games focusing early math and executive functions. Based on a combination of video-ethnography, focus groups, field notes and digital progression log data, the analysis of a pilot study of the pedagogical intervention challenges and extends theoretical and methodological perspectives on what it means to undertake an intervention study in this context. The aim is to discuss what a mixed-methods research approach may provide for the understanding of intervention methodology by illustrating how different types of data provide understandings of how and to what extent the intervention components are functional in the pedagogical setting. The conclusion the analysis supports is that unless children’s and preschool teachers’ meaning making of the unfolding actions in the digital interface make them engage in the activity and dynamically fits within the institutional preschool system, the intervention will not be functional. A pilot study can provide detailed understandings of why, how and in what contexts interventions as part of the dynamic preschool systems can be implemented with adherence and fidelity.

# Outcome

"By foregrounding meaning making and a multi-method approach, we argue that the quality of a pilot study, of this sort, depends on the methodological capacity to capture the complexity of the dynamic system (Overton 2013), into which the intervention is introduced. It is further suggested that an analysis of the dynamic system can be taken as point of departure in the design of a functional intervention, following a specified theory of change along with specific materials to which the participants are able to adhere.... However, the ethical demands on informed consent in communication with children and teachers is more important than being able to delimit observation effects (Nicholas 2016) and this study shows that the material can be nuanced by using different methods.... One question remains: are we ready for individual digital learning in the preschool? Earlier math-intervention studies in the digital interface show that it is possible (Llorente et al. 2015; Presser, Vahey, and Dominguez 2015), as well as desired, if one shall believe Clements and Sarama (2011) andGoodwin (2008). The latter study indicates that such interventions can help young children develop informal knowledge in mathematics, and that digital tools can afford children possibilities to engage in advanced mathematical ideas (Goodwin 2008). Our study indicates that we are ready, given the quality of digital individual learning." (Authors, 443-444)